WHAT IS CLAIMED IS:

1. Method for automating an initiation of MRI data acquisition upon detection of QRS complex in an ECG signal for a patient undergoing MRI, comprising the steps of:

correlating a QRS complex template with a continuous-in-time ECG signal of a patient, the QRS complex template representative of a shape in time unique to QRS complex in a set of QRS complexes for the patient;

determining a threshold that when exceeded indicates that the continuous-in-time ECG signal substantially correlates with the QRS complex template;

correlating a real-time ECG signal of the patient while undergoing MRI with the QRS complex template; and,

initiating automatically a prescribed MRI data acquisition at a point in time when the correlation of the real-time ECG signal with the QRS complex template exceeds the threshold.

2. Method as in claim 1, further comprising:

receiving the real-time ECG signal from an ECG test probe attached at one end to the patient and at the other end to an ECG machine.

3. Method as in claim 1, further comprising:

indicating on a display of voltage versus time, the shape in time unique to the QRS complex in said set of QRS complexes in the patient, the shape in time comprising a Q peak, an R peak, and an S peak of the QRS complex.

4. Method as in claim 1, wherein the first correlating step further comprises:

superimposing the QRS complex template over the continuous-in-time ECG signal.

5. Method as in claim 4, wherein the superimposing step further comprises:

continuously shifting forward in time the superimposed QRS complex template over the continuous-in-time ECG signal.

6. Method as in claim 1, wherein the determining step further comprises:

assigning a high correlation value when during a particular window of time the QRS complex template substantially correlates with the continuous-in-time ECG signal; and

assigning a low correlation value when during a particular window of time there is an absence of a substantially close correlation of the QRS complex template with the continuous-in-time ECG signal.

7. A method as in claim 6, wherein the determining step further comprises:

continuously shifting forward in time the window of time.

8. A method as in claim 1, wherein the second correlating step further comprises:

superimposing the QRS complex template over the real-time ECG signal from the patient undergoing MRI.

9. A method as in claim 8, wherein the superimposing step further comprises:

continuously shifting forward in time the superimposed QRS complex template over the real-time ECG signal.

10. A method as in claim 1, wherein prior to the initiating step a MRI machine receives a trigger pulse indicating an initiation of a prescribed MRI data acquisition.

11. A method as in claim 1, wherein the prescribed MRI data acquisition comprises at least one of:

updating a type of data being acquired and, initiating an initiation of a data acquisition process.

12. Method for automating an initiation of MRI data acquisition upon a detection of QRS complex in an ECG signal for a patient undergoing MRI, comprising the steps of:

correlating a QRS complex template with each continuous-in-time ECG signal received from a set of ECG channels of a patient, the QRS complex template representative of a shape in time unique to a QRS complex in a set of QRS complexes for the patient;

assigning a weighted score for each ECG channel indicative of a strength of

the correlation of the QRS complex template with the continuous-in-time ECG signal for a particular ECG channel in said set of ECG channels;

determining a threshold that when exceeded indicates that the continuous-in-time ECG signal correlates with the QRS complex template, the threshold a combined value of each continuous-in-time ECG signal in said set of ECG channels, the contribution of each ECG channel to the threshold proportionate to the assigned weighted score for each ECG channel;

correlating the QRS complex template for each ECG channel in said set of ECG channels with a real-time ECG signal for each ECG channel in said set of ECG channels of the patient undergoing MRI;

combining the correlations for each ECG channel in said set of ECG channels, the contribution of each ECG channel to the combined correlation proportionate to the weighted score assigned to each ECG channel; and,

initiating automatically a prescribed MRI data acquisition at a point in time when the combined correlation exceeds the threshold.

13. A method as in claim 12, wherein the first correlating step further comprises:

choosing a window of time for the correlation of QRS template with the continuous-in-time ECG signal in a single ECG channel that is representative of a window of time at which QRS complex generally occurs in the remaining ECG channels.

14. A method as in claim 12, wherein the assigning step further comprises:

associating a higher weighted score for an ECG channel having a stronger correlation of the QRS complex template with the continuous-in-time ECG signal; and

associating a lower weighted score for an ECG channel having a weaker correlation of the QRS complex template with the continuous-in-time ECG signal.

15. A method as in claim 12, wherein the threshold comprises an overall threshold for each ECG channel, individual thresholds contributing to the overall threshold proportionate to the weighted score associated with each ECG channel.

16. A method for automating an initiation of MRI data acquisition upon detection of QRS complex in an ECG signal for a patient undergoing MRI, comprising the steps of:

determining a QRS complex template having a shape in time representative of an average shape in time of QRS complex in a set of QRS complexes in an ECG signal for a patient;

correlating the QRS complex template with a continuous-in-time ECG signal of the patient;

determining a threshold that when exceeded indicates that the continuous-in-time ECG signal correlates with the QRS complex template;

correlating a real-time ECG signal from the patient undergoing MRI with the QRS complex template; and,

initiating automatically a prescribed MRI data acquisition at a point in time

when the correlation of the real-time ECG signal with the QRS complex template exceeds the threshold.

17. Method as in claim 16, wherein the first correlating step further comprises:

superimposing the QRS complex template over the continuous-in-time ECG signal sample.

18. Method as in claim 17, wherein the superimposing step further comprises:

continuously shifting forward in time the superimposed QRS complex template over the continuous-in-time ECG signal sample.

19. Method as in claim 16, wherein the second determining step further comprises:

assigning a high correlation value when during a particular window of time the QRS complex template substantially correlates with the continuous-in-time ECG signal; and

assigning a low correlation value when during a particular window of time there is an absence of a substantially close correlation of the QRS complex template with the continuous-in-time ECG signal.

20. A method as in claim 19, wherein the window of time continuously shifts.

21. A method as in claim 16, wherein the second correlating step further comprises:

superimposing the QRS complex template over the real-time ECG signal of the patient undergoing MRI.

22. A method as in claim 21, wherein the superimposing step further comprises:

continuously shifting forward in time the superimposed QRS complex template over the real-time ECG signal.

23. A method as in claim 16, further comprising prior to the initiating step

receiving a trigger pulse which indicates a time at which to initiate the initiation of the prescribed MRI data acquisition.

24. A method as in claim 16, wherein the prescribed MRI data acquisition comprises at least one of an update of a type of data being acquired and an initiation of a data acquisition process.

25. A computer system for detecting a QRS complex, the computer system comprising:

a memory; and

a processor interconnected with the memory and having at least one software component loaded therein,

wherein the software component causes the processor to execute the steps of method according to claim 1.

26. A computer program product comprising a computer readable medium having a software component encoded thereon in computer readable form, wherein the software component may be loaded into a memory of a computer system and cause a processor interconnected with the memory to execute the steps of a method according to claim 1.

27. Method for automating an initiation of MRI data acquisition upon detection of QRS complex in an ECG signal for a patient undergoing MRI, comprising the steps of:

correlating a QRS complex template with a continuous-in-time ECG signal of a patient, the QRS complex template representative of a shape in time unique to QRS complex in a set of QRS complexes for the patient;

determining a threshold that when exceeded indicates that the continuous-in-time ECG signal substantially correlates with the QRS complex template;

correlating a real-time ECG signal of the patient while undergoing MRI with the QRS complex template

28. Method for automating an initiation of MRI data acquisition upon correlation of a real-time ECG signal of a patient undergoing MRI with a predescribed template, comprising the steps of:

correlating a predescribed template with a continuous-in-time ECG signal of a

patient, the predescribed template representative of a time course unique to a subsection of the ECG signal for the patient in a series of subsections of the ECG signal for the patient;

determining a threshold that when exceeded indicates that the continuous-in-time ECG signal substantially correlates with the predescribed template;

correlating a real-time ECG signal of the patient while undergoing MRI with the predescribed template.

29. A method as in claim 28, further comprising:

initiating automatically a prescribed MRI data acquisition when the correlation of the real-time ECG signal with the predescribed template exceeds the threshold.

30. A method as in claim 28, further comprising:

determining the time course unique to the subsection of the ECG signal from a visual display of the ECG signal.

31. A method as in claim 28, further comprising, wherein the first correlating step further comprises:

superimposing the predescribed template over the continuous-in-time ECG signal.

32. A method as in claim 31, wherein the superimposing step further comprises:

continuously shifting forward in time the superimposed predescribed template over the continuous-in-time ECG signal.

33. A method as in claim 28, wherein the determining step further comprises:

assigning a high correlation value when during a particular temporal segment the predescribed template substantially correlates with the continuous-in-time ECG signal; and

assigning a low correlation value when during a particular temporal segment there is an absence of a substantially close correlation of the predescribed template with the continuous-in-time ECG signal.

34. A method as in claim 28, wherein the second correlating step further comprises:

superimposing the predescribed template over the real-time ECG signal from the patient undergoing MRI.

35. A method as in claim 34, wherein the superimposing step further comprises:

continuously shifting forward in time the superimposed predescribed template over the real-time ECG signal.

36. Method for automating an initiation of MRI data acquisition upon correlation of a real-time ECG signal of a patient undergoing MRI with a predescribed template, comprising the steps of:

correlating a predescribed template with each continuous-in-time ECG signal received from a set of ECG channels of a patient, the predescribed template representative of a time course unique to a subsection of the continuous-in-time ECG signal for the patient;

assigning a weighted score for each ECG channel indicative of a strength of the correlation of the predescribed template with the continuous-in-time ECG signal for a particular ECG channel in said set of ECG channels;

determining a threshold that when exceeded indicates that the continuous-in-time ECG signal correlates with the predescribed template, the threshold a combined value for each continuous-in-time ECG signal in said set of ECG channels, the contribution of each ECG channel to the threshold proportionate to a weighted score assigned to each ECG channel;

correlating the predescribed template for each ECG channel in said set of ECG channels with a real-time ECG signal for each ECG channel in said set of ECG channels of the patient undergoing MRI;

combining the correlations for each ECG channel in said set of ECG channels, the contribution of each ECG channel to the combined correlation proportionate to the weighted score assigned to each ECG channel; and,

initiating automatically a prescribed MRI data acquisition when the combined correlation exceeds the threshold.

37. A method as in claim 36, wherein the first correlating step further comprises:

choosing a temporal segment for the correlation of predescribed template with the continuous-in-time ECG signal in a single ECG channel which clearly depicts the time course unique to the subsection of the continuous-in-time ECG signal.

38. A method as in claim 36, wherein the assigning step further comprises:

associating a higher weighted score for an ECG channel having a stronger correlation of the predescribed template with the continuous-in-time ECG signal; and

associating a lower weighted score for an ECG channel having a weaker correlation of the predescribed template with the continuous-in-time ECG signal.

39. A method as in claim 38, wherein the threshold comprises an overall threshold for each ECG channel, individual thresholds of each ECG channel contributing to the overall threshold proportionate to the weighted score associated with each ECG channel.